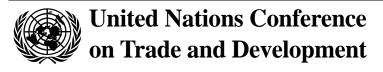**United Nations Conference
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Outcome of the meeting "Science, technology, innovation and ICTs for development"

Pre-conference event, Geneva, 6 December 2007

Note prepared by the UNCTAD secretariat

Summary of discussions

1.   Participating experts from Governments, intergovernmental organizations, academia and non-governmental organizations (NGOs) discussed the strong contribution that science and technology, innovation, and information and communication technology (ICT) can make to the achievement of many development objectives, including through the enhancement of productive capacities of developing countries. Experts agreed that investment in science and technology was essential. Government policies should support science, technology and innovation, and provide (science-based) regulatory frameworks for industrial technologies. It was noted that ICTs were changing the way science and technology research and development were conducted. ICTs were also accelerating the rate of technological development and adoption. Often, academic and public institutions lacked experience in dealing with such changes. One of the policy questions was how to scale up academic institutions from the perspective of increasing connectivity and cooperation.

2.   The experiences from developed countries in science, technology and innovation and ICT policy were not entirely applicable in developing countries and required adaptation. This was particularly true for the smaller developing countries and least developed countries, where science, technology and innovation capacity should be elevated from a missing or marginal component of the development agenda to an essential element of every country's strategy for reducing poverty and achieving the Millennium Development Goals. For this, Governments needed to work closely with the civil society and academia.

3.   Participants discussed how the paradigm of science, technology and innovation had moved away from "linear" to "circular" models of national innovation systems. "Circular" models reflected the present far more complex context in which policymakers needed to pay attention to the totality of the interactions between all actors of the national innovation systems (consumers, firms, education systems,

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financial systems and other infrastructure, and Government). Additional difficulties resulted from the difference in speed of policy development, compared to technological development. Serious policy scrutiny and balanced consideration of the scope and depth of effects of technology policies were needed. Other policy aspects in science, technology and innovation that needed attention were openness and transparency, social inclusion and gender equality.

4. Although science and technology activities were becoming increasingly "denationalized", being conducted across borders and by entities from both the public and the private sector, it was noted that the globalization of science and technology was uneven and that there was little evidence that they were spreading out equitably to developing countries. While it was true that globalization and private investment had led to the expansion of research and development capacities in some countries, it was misleading to produce generalizations based on the experience of a few large developing countries.

5. A number of international partnership initiatives to build science, technology and innovation capacity in developing countries were presented at the event. These included the Iraqi Virtual Science Library project (which was funded by the Government of the United States) and UNCTAD's network of centres of excellence, which was sponsored by the Government of Italy.

6. When discussing the experiences of developing countries in ICT innovation, it was underlined that the impact of ICTs depended on complex issues of implementation, learning, and feedback mechanisms and outcomes. The linkages between institutions, technologies, knowledge and incentives were crucial. Evidence from developing countries showed that a narrow ICT focus did not result in balanced innovation. To remedy this problem, ICT policies needed to be formulated within broader technology and national innovation systems policies, as well as overall development policy.

7. The impact of ICTs on employment was considered a key aspect of the contribution of ICTs to the achievement of the Millennium Development Goals. Technology was not leveling the playing field; on the contrary, it was leveraging existing endowments and could increase the gap between developed and developing countries. Enterprises and workers should empower themselves for ICT use. A necessary condition for this was that labour worked in the formal sector. Another was a policy approach for developing productive employment that paid decent salaries.

8. It was underlined that public–private partnerships in the ICT field required a mutual understanding of the roles and contributions of each partner, and an equal sharing of the risks. Legislative changes might be needed in order, for example, to better specify the rights and obligations and modes of interaction of partnership participants within a flexible framework.

9. Discussing the global governance of ICT, experts referred to some barriers to effective participation faced by developing countries. Some forums had become so specialized that often Governments, particularly those from developing countries, had difficulty in following their activities. Working methods were different and development considerations were sometimes secondary. There was also an under-supply of relevant knowledge. Moving forward required that ICT governance be considered from the perspective of its implications for development. Developing countries needed to participate effectively in these processes in order to avoid being standard-takers rather than standard-setters.

10. Several participants said that current international intellectual property regimes limited the potential of science and technology to contribute to development and hampered the transfer of technology. It was suggested that the World Intellectual

Property Organization's (WIPO's) recently established development agenda could be taken into account in the preparatory process for UNCTAD XII. A question was raised about how to better promote WIPO's development agenda in the context of UNCTAD, the Internet Governance Forum and other bodies. It was also suggested that international intellectual property regimes needed to be developed and balanced with other modalities of developing and sharing (a) science and technology and (b) research and development. These included open access frameworks – particularly in the context of the new knowledge-based society and economy – and UNCTAD's exploring the implications of such frameworks for developing countries.

11.   Many delegates stated that science, technology and innovation and ICTs should be high priorities for UNCTAD. It was also suggested that innovation could be a flagship activity within UNCTAD and that UNCTAD should promote research and development for development for the benefit of all developing countries. Attention should also be given to the "engineering" link within science and technology. Other aspects to be analyzed by UNCTAD were the role of South–South cooperation in research and development and how applications of technology could be enhanced and put to use to facilitate the achievement of the Millennium Development Goals. The outcomes of the World Summit on the Information Society (WSIS) should provide the guideline for activities in this field. It was recommended that, since the UNCTAD secretariat also served as the secretariat of the Commission on Science and Technology for Development (CSTD), UNCTAD should better align its work programme on that of the CSTD and WSIS follow-up.

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